

# EXHIBIT B

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BARRY LAMAR BONDS  
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14 UNITED STATES DISTRICT COURT  
15 NORTHERN DISTRICT OF CALIFORNIA  
16 SAN FRANCISCO VENUE  
17  
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19 UNITED STATES OF AMERICA,

NO. CR 07-0732 SI

20 Plaintiff,

21 vs.

DECLARATION OF  
RONALD S. SWERDLOFF, M.D.

22 BARRY LAMAR BONDS,

23 Defendants.  
24 \_\_\_\_\_ /

25 I, Ronald S. Swerdloff, declare as follows:

26 1. I am a medical doctor with specialization in endocrinology, internal medicine  
27 and andrology. Since 1991 to the present, I have been the Director of the Harbor-UCLA  
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1 Reproductive Program - World Health Organization Collaborative Center for  
2 Reproduction. Since 1973 I have held the position Chief of the Division of Endocrinology  
3 and from 1997 to the present, I have also served as Associate Chair in the Department  
4 of Medicine at the Harbor-UCLA Medical Center. I have extensive experience in the  
5 fields of research regarding effects of exogenous consumption of testosterone and other  
6 androgens (anabolic steroids) and of human growth hormone. I have conducted  
7 numerous clinical studies involving the administration of these substances to patients. I  
8 have treated and/or examined more than 1000 individuals who have ingested  
9 therapeutic testosterone and more than 100 individuals who have ingested therapeutic  
10 human growth hormone. I have published more than 400 published articles and have  
11 provided expert testimony in court and in depositions on more than a dozen occasions.

12 2. I have been asked to review two declarations submitted by Larry Bowers,  
13 Ph.D. in this matter -- one dated January 26, 2009 and the other dated February 13,  
14 2009 -- and to comment on Dr. Bowers' assertions concerning the known and  
15 scientifically established side effects of anabolic steroids and human growth hormone. I  
16 will focus my comments on the more recent declaration.

17 3. Dr. Bowers offers the opinion that "all anabolic steroids have [the following]  
18 effects" on people: "increased hair growth on the trunk and extremities (primarily in  
19 women), male pattern baldness, the development of acne, particularly on the upper  
20 back, decrease in testicular size, increased aggressiveness, feelings of invincibility, "roid  
21 rage," weakening of the heart, hypertension, injury to the liver and possible links to  
22 prostate cancer." (Bowers' Declaration, Feb. 13, 2009, ¶ 3.) He bases these opinions  
23 on two medical textbooks, fourteen articles or studies discussing anabolic steroids, and  
24 information conveyed to him from athletes who admitted using anabolic steroids. I will  
25 comment on several of the listed side effects.

26 4. I have reviewed the medical textbooks and articles cited by Dr. Bowers.  
27 Based upon those sources (except for the German language article which I could not  
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1 read), other sources of which I am aware and my extensive professional experience as  
2 a physician in the field of endocrinology, I offer these comments concerning the effects  
3 of testosterone and anabolic steroids.

4 a. Hair growth on the trunk and extremities. This effect is well-  
5 documented in women, children and testosterone deficient men. None of the literature  
6 cited by Dr. Bowers provided any support for this effect in healthy adult men with normal  
7 levels of testosterone prior to the use of anabolic steroids. I am not aware of any study  
8 demonstrating that the ingestion of an anabolic steroid had the effect of increasing hair  
9 growth in an otherwise healthy adult male.

10 b. Male pattern baldness. Typically, such baldness is triggered by the  
11 flow of testosterone in the genetically disposed adult male. None of the literature cited  
12 by Dr. Bowers provided scientific support for an enhanced effect in normal healthy adult  
13 men. I am not aware of any study demonstrating that the administration of an anabolic  
14 steroid had the effect of increasing the chances of male pattern balding in an otherwise  
15 healthy adult male with normal levels of testosterone prior to the use of anabolic  
16 steroids.

17 c. Testicular atrophy. Several studies have found evidence of this effect  
18 on the testicles after several months of the administration of therapeutic doses of  
19 testosterone (i.e. = to or > 200 mg./2 week as injectable testosterone enanthate) to  
20 healthy adult males. Although I remain unaware of any similar prospective studies  
21 establishing this effect from other anabolic steroids, it is reasonable to assume that it  
22 could occur. The effect, however, is dependent on the suppression of the signals ( LH  
23 and FSH) that stimulate the testes and is thus dependant upon the dosage and length  
24 of treatment. Clinically, the effect is determined by measurement with a special  
25 instrument, the "orchidometer." Although the testes themselves may decrease in size,  
26 the size of the scrotum itself does not change. For these reasons, in my experience  
27 most patients are themselves unaware of this effect, which is not easily discernible by  
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1 vision or touch. Our experience is that there is considerable variation in the ability of  
2 general physicians to accurately measure testis size and that the orchidometer is  
3 usually required to detect the effect. Based on this, an untrained layperson might have  
4 difficulty discerning it even by touch.

5 d. Psychological Effects – aggressiveness, feelings of invincibility, and  
6 “roid rage.” These observations are controversial and are confounded by the extensive  
7 anecdotal information available to the public at large. One of the papers cited by Dr.  
8 Bowers, is a good example. Thiblin I, Lindquit O, Rajs R. 2000; *Causes and Manner of*  
9 *Death Among Users of Anabolic Androgenic Steroids*; Journal of Forensic Science  
10 45;16-23. This was a retrospective study, with no controls, that attempted to examine  
11 the behavior and manner of death of 34 males who were known to have used anabolic  
12 steroids. Any potential findings were thoroughly confounded by the facts that the  
13 subjects of the study were not followed before they started consuming steroids and  
14 were known to have consumed or abused numerous other substances including  
15 alcohol, marijuana, cocaine, amphetamines and other stimulants or illicit drugs. Turning  
16 to controlled prospective studies, the results are decidedly mixed. One blinded study,  
17 for example, (not cited by Dr. Bowers) found no significant psychological effects after a  
18 ten week treatment of testosterone at 600 mg./week. Bhasin, S., et al., The Effects of  
19 Supraphysiologic Doses of Testosterone on Muscle Size and Strength in Normal Men,  
20 New England Journal of Medicine (1996), Volume 335, No. 1. This contrasts with a  
21 study cited by Dr. Bowers – Pope Jr HG, et al., 2000. *Effects of Supraphysiological*  
22 *Doses of Testosterone on Mood and Aggression in Normal Men: A Randomized*  
23 *Controlled Trial*. Arch Gen Psych 57:133 40. This study found that after two six week  
24 treatments of testosterone, dosage 600 mg./week, followed by six week recovery  
25 periods, a significantly greater number of the subjects receiving testosterone exhibited  
26 mania, hypomania and aggressiveness. The limited nature of the study’s findings is  
27 well expressed in the study’s abstract:

1 Testosterone administration, 600 mg/wk significantly increased ratings of  
2 manic symptoms in normal men. This effect, however, was not uniform  
3 across individuals; most showed little psychological change, whereas a few  
developed prominent effects. The mechanism of these variable reactions  
remains unclear.

4 Other studies have shown that men who are low in testosterone levels (hypogonadism)  
5 have mood problems (depressive symptoms) and that testosterone treatment will  
6 improve these symptoms. Thus, in my opinion the evidence from controlled studies  
7 concerning any psychological effects of testosterone is decidedly mixed and there is no  
8 agreement in the scientific community.

9 e. Prostate cancer. I am not aware of any evidence, even after reviewing  
10 the sources cited by Dr. Bowers, linking the use of anabolic steroids as causative to  
11 prostate cancer in otherwise healthy, adult males.

12 5. Apparently in reference to exogenous human growth hormone, Dr. Bowers  
13 offers the opinion that "[s]ide effects of HGH can also include an increase in the size of  
14 one's head or skull, jaw, hands and fingers, and feet and toes, as well as improved eye-  
15 sight." (Bowers' Declaration, Feb. 13, 2009, ¶ 5.)

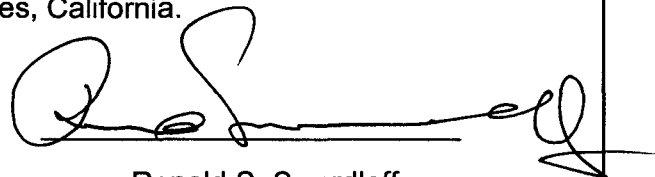
16 6. I have reviewed the medical textbooks and articles cited by Dr. Bowers to  
17 support his opinions. As a physician specializing in endocrinology and director of a clinic  
18 dedicated to pituitary conditions, I am also very familiar with the condition known as  
19 acromegaly, which commonly involves highly elevated levels of human growth hormone  
20 resulting from a tumor or other affliction of the pituitary gland. Acromegaly can cause  
21 increased bony growth. These symptoms develop slowly, usually over many years.  
22 Commonly, the symptoms are not noticed and the condition is not diagnosed for years,  
23 often for as long as 10 years. Based upon the sources cited by Dr. Bowers, other  
24 sources of which I am aware and my extensive professional experience, I have these  
25 comments concerning the effects of exogenous human growth hormone.

26 a. I have never seen any reference to improved eyesight as an effect of the  
27 exogenous administration of human growth hormone in people. The sources cited by  
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1 Dr. Bowers provide none.

2 b. I am not aware of any published study, historical or prospective, controlled or  
3 otherwise, demonstrating that the introduction of exogenous human growth hormone to  
4 healthy, adult athletes actually results in bony growth such as would cause an increase  
5 in the size of the skull, jaw, fingers, toes, etc. . See, e.g. Holt RI, et al. *Growth*  
6 *hormone, IG F-I and insulin and their abuse in sport*. Brit. Jour. Pharmacol. 2008;  
7 154:542-56, p. 548 (the only potential physical adverse side effects of human growth  
8 hormone arise from sodium and fluid retention, possibly leading to ankle swelling,  
9 hypertension and headache). To my knowledge, the proposition that exogenous human  
10 growth hormone in athletes could cause bony growth arises from primarily from the  
11 analogy to acromegaly. However, to my knowledge that analogy when applied to bone  
12 overgrowth is not supported by experience in clinical trials with adults. Therefore, the  
13 effects of exogenous human growth hormone on bone growth in normal adults is  
14 theoretical and not evidence based. Moreover, the analogy would suggest that the  
15 increase in bony growth would occur very gradually over many years of high human  
16 growth hormone levels. Thus, even if apt, the analogy would hold that it would take  
17 many years of HGH use, resulting in high levels of HGH, before athletes would exhibit  
18 noticeable bony growth. Again, even after reviewing the materials cited by Dr. Bowers, I  
19 am not aware of any study documenting such an effect on bone growth including that  
20 which would increase the size of the skull from exogenous human growth hormone in  
21 healthy adult males.

22 I declare under penalty of perjury that the foregoing is true and correct. Executed  
23 this 18<sup>th</sup> day of February, 2009, in Los Angeles, California.

24 

25  
26 Ronald S. Swerdloff

27 2-18-2009